Claim Amendments

1. (Currently amended) A computer-readable medium having computer-executable instructions for performing steps by a client for establishing an authenticated connection under the Hypertext Transfer Protocol (HTTP) with a server, comprising:

preparing a HTTP connection request packet containing authentication request data for requesting establishment of an authenticated network connection under HTTP, the authentication request data formatted for prompting a server recognizing said data to respond with a first pre-defined message and for causing prompting a server not recognizing said data to respond with a second pre-defined message;

sending the HTTP connection request communication packet to the server;

receiving a HTTP response packet containing a response message from the server responding to the HTTP connection request communication packet;

if the HTTP response message includes is the first pre-defined message, transmitting credential data of the client in subsequent HTTP packets to the server for authentication;

if the HTTP response message includes is the second pre-defined message, transmitting subsequent communication to the server over a non-authenticated HTTP connection.

2. (Currently amended) A computer-readable medium as in claim 1, having further computer-executable instructions for performing the step of: if the HTTP response message includes is a third pre-defined message indicating that the client has an existing authenticated HTTP connection with the server, transmitting subsequent communication to the server over the existing authenticated HTTP connection.

3. (Currently amended) A computer-readable medium as in claim 1, having further computer-executable instructions for performing the steps of:

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identifying from the <u>HTTP</u> response packet an authentication protocol supported by the server;

communicating with server, including said transmitting credential data, to perform authentication of the client under the authentication protocol.

4. (Currently amended) A computer-readable medium as in claim 1, wherein the authentication request data are included in a header portion of the <u>HTTP connection</u> request packet.

5. (Currently amended) A computer-readable medium as in claim 4, wherein ~~the request packet is constructed as a Hypertext Transport Protocol (HTTP) request, and~~ the authentication request data identify a method <u>defined in the Hypertext Transfer Protocol (HTTP)</u> ~~under the Hypertext Transport Protocol~~.

6. (Currently amended) A computer-readable medium as in claim 1, wherein ~~the request and response packets are constructed under a first communication protocol, and~~ each of the <u>HTTP connection</u> request and <u>HTTP</u> response packets <u>contains</u> ~~containing~~ a data portion containing communication data formatted according to a second communication protocol, and wherein the authentication request data are in the data portion of the <u>HTTP connection</u> request packet.

7. (Canceled) A computer-readable medium as in claim 6, wherein the first communication protocol is the Hypertext Transport Protocol (HTTP).

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8. (Original) A computer-readable medium as in claim 6, wherein the second communication protocol is the Internet Printing Protocol (IPP).

9. (Currently amended) A computer-readable medium having stored thereon a data structure having:

a first data region containing data representing a header portion of a <u>Hypertext Transfer Protocol (HTTP)</u> communication packet, including authentication request data representing a request by a client to form an authenticated <u>HTTP</u> connection with a server, the authentication request data formatted to <u>cause</u> prompt a server not recognizing the authentication request data to respond with a pre-defined error message; and

a second data region containing data representing a data portion of the <u>HTTP</u> communication packet.

10. (Canceled) A computer-readable medium as in claim 9, wherein the communication packet is formatted according to the Hypertext Transport Protocol (HTTP).

11. (Currently amended) A computer-readable medium as in claim 10, wherein the authentication data <u>identify</u> represent a method <u>defined in the Hypertext Transfer Protocol (HTTP)</u> under the Hypertext Transport Protocol.

12. (Currently amended) A computer-readable medium having stored thereon a data structure having:

a first data region containing data representing a header portion of a <u>Hypertext Transfer Protocol (HTTP)</u> communication packet, and

a second data region containing data representing a data portion of the communication

packet, including authentication request data representing a request by a client to form an

authenticated HTTP connection with a server, the authentication request data formatted to cause

~~prompt~~ a server not recognizing said authentication request data to respond with a pre-defined

error message.

13. (Canceled) A computer-readable medium as in claim 12, wherein the communication

packet is formatted according to the Hypertext transport Protocol (HTTP).

14. (Currently amended) A computer-readable medium as in claim 13, wherein the data

in the second data region represent communication data formatted according to the Internet

Printing Protocol (IPP), and the authentication data identify ~~represent~~ an operation under the

Internet Printing Protocol.

15. (Currently amended) A method of communication for a client to force a server

supporting both authenticated and non-authenticated network connections under the Hypertext

Transfer Protocol (HTTP) to establish an authenticated HTTP network connection, comprising

the steps of:

sending, by the client, a HTTP connection request packet to the server, the HTTP

connection request packet including authentication request data indicating a request for forming

an authenticated HTTP connection with the server,

checking, by the server in response to receipt of the HTTP connection request packet,

whether an authenticated HTTP connection with the client exists;

if an authenticated <u>HTTP</u> connection with the client does not exist, returning by the server to the client a <u>HTTP</u> response packet including a response message indicating recognition of the authentication request data;

in response to the response message in the <u>HTTP</u> response packet <u>indicating recognition of the authentication request data</u>, sending by the client credential data to the server for authentication.

16. (Currently amended) A method as in claim 15, wherein the <u>HTTP</u> response packet includes an identification of an authentication protocol supported by the server, and the step of sending credential data includes communicating with the server for client authentication according to the authentication protocol.